Consortium for Blood Group Genes (CBGG): 2007 report

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The Consortium for Blood Group Genes is a worldwide organization whose goal is to have a vehicle to interact, establish guidelines, operate a proficiency program, and provide education for laboratories involved in DNA and RNA testing for the prediction of blood group, platelet, and neutrophil antigens. ***Immunohematology* 2007;23:165–8.**

Key Words: blood group genes; molecular testing, workshop report; Consortium for Blood Group Genes; proficiency

Background

The Consortium for Blood Group Genes (CBGG) was started by a group of people interested in DNA analyses for blood groups who recognized that there was a growing need to establish guidelines and proficiency testing. The originator and overall coordinator is Marion Reid, and there are three country coordinators: Lilian Castilho for Brazil, Gregory Denomme for Canada, and Connie Westhoff for the United States. All members are expected to interact and participate. The background and progress, including the CBGG logo, history, and mission, have been published.[1–3] The CBGG is a nonprofit organization whose purpose is to provide a means for members to interact, educate, and help each other. The purpose of this report is to summarize the 2007 meetings, which were held in two locations: North Carolina, USA, and São Paulo, Brazil. It was written by the coordinator and liaisons, with input from members (Table 1).

Discussion Documents

Two documents, one entitled the *CBGG Document* and the other the *CBGG Discussion Document,* containing items for discussion, were circulated to members before the meeting and addressed by the group at both meetings. The information given in the *CBGG Document* was accepted with minor changes. Suggestions from the group present at the meetings as well as from those who sent comments via e-mail were incorporated into the Document; this updated *CBGG Post Meeting Document* 2007 was distributed to CBGG members and is available to nonmembers on request.

Template disclaimers

It was decided that the disclaimer to accompany reports of molecular analyses developed by the group in 2006 was suitable for use in reporting donor and patient test results. The disclaimer was modified to reflect what DNA-based assays are intended for as well as what they are not intended for. Reference to the "FDA" and "CLIA" can be changed to include "Health Canada," "ANVISA" (Agencia Nacional de Vigilancia Sanitaria) Brazil, or other regulating bodies as required. Blood components should not be labeled with molecular test results as the sole means of determining the antigen status; the disclaimer statement must appear on the product tag if that information is used. A separate paper report with the disclaimer is adequate.

Guidelines for molecular testing

It was agreed that the CBGG should continue with the development of "Standards" that are free and accessible for general distribution. The CBGG "Standards" have been shared with the AABB Molecular Testing Standards Program Unit (SPU) and will be consistent with the Standards being developed by them. A draft version of the AABB Standards will be sent to all CBGG members for review and comment. The CBGG "Standards" will also be compared with the American Society of Histocompatibility and Immunogenetics (ASHI) Standards to be consistent with them. The CBGG will discuss, modify, and finalize their "Standards" by open discussion and present them in an International Standards Organization (ISO) format and generic in regards to regulatory agencies. The CBGG "Standards" will be renamed "Guidelines" to reflect the fact that the CBGG will not perform laboratory inspections.

*a full listing of the members of the CBGG can be found in Table 1 on page 166.

Table 1. Members of CBGG

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Target alleles

A list of target single-nucleotide polymorphisms (SNPs) was prepared for the *CBGG Post Meeting Document 2007.* Blood groups requiring analysis of more than one SNP to minimize the chance of misinterpretation were noted and are required. Control DNA samples were recommended.

Reorganization of proficiency program

A simple exchange of samples among several laboratories performing DNA assays for the prediction of blood group antigens has been in effect and operated by Marion Reid and Kim Hue-Roye since the CBGG was formed in 2004. Samples are exchanged in the spring and fall. DNA (or whole blood) from one sample is sent for testing for a defined SNP. For RBC typing, before shipping the proficiency sample, the predicted antigen was confirmed by a method other than DNA testing (i.e., hemagglutination) with the caveat that the proficiency exercise would not involve rare alleles and should be straightforward. Along the same lines, the proficiency testing program for platelet and neutrophil antigens (which is in development) should also be straightforward and not involve rare alleles. But unlike RBC typing, confirmation of the antigen(s) would be based on the DNA results only. Methods such as monoclonal antibody immobilization of platelet antigens (MAIPA) or modified antigen capture ELISA (MACE) assays are not usually performed for typing confirmation. Results obtained by the testing laboratories are returned to the submitting laboratory, which then confirms (or not) the results and interpretation. A form has been developed for this purpose, a copy of which is contained in the *CBGG Post Meeting Document 2007.* It was decided, starting October 2007, that the "submitting laboratory" should rotate among members of the Proficiency Program. For logistic reasons, there will be two programs; one with an exchange among the South American members and the other among all other interested members. It was also agreed that one proficiency sample would be used for all types of technology: microarray, PCR-RFLP, multiplex, and so forth. If more than one laboratory is in disagreement with the submitting laboratory, there will be an investigation. If only one laboratory is different, that laboratory should perform its own internal investigation. The New York Blood Center remains the overall coordinator.

Reimbursement codes

A list of Current Procedural Terminology codes for reimbursement in U.S. facilities has been included in the *CBGG Post Meeting Document.*

Conclusion

The CBGG is a self-help, nonprofit organization designed for members to support and to learn from each other. Anyone interested in molecular testing for blood groups and willing to contribute intellectually is welcome to join. To become a member, contact Marion Reid (mreid@nybloodcenter.org), Lilian Castilho (castilho@unicamp.br), Greg Denomme (greg.denomme @bloodservices.ca), or Connie Westhoff (WesthoffC@ usa. redcross.org).

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